

Semen Cassiae versus Semen Cassiae Occidentalis



Source

***Semen Cassiae**
is the dried ripe seed of
Cassia obtusifolia L. or
C. tora L.
in the family Leguminosae

Semen Cassiae Occidentalis
is the dried seed of
Cassia occidentalis L.
in the family Leguminosae

Overview

Semen Cassiae and Semen Cassiae Occidentalis are both recorded in Schedule 2 of the Chinese Medicine Ordinance, while Semen Cassiae has also been recorded in the Chinese Pharmacopoeia (2020). According to *Zhong hua ben cao* and *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs*, Semen Cassiae is the main species of commercial use, which possesses the functions of clearing the liver and improving vision; and draining water and relaxing the bowels. On the other hand, Semen Cassiae Occidentalis are only used in certain area, and had been recorded in the *Jiu huang ben cao* to be a substitute Chinese Materia Medica (CMM) for Semen Cassiae, thus, also named as “*Jia Jue ming*”. Semen Cassiae Occidentalis has the function of clearing the liver; invigorating the stomach; relaxing the bowels; and detoxification. Despite both CMM belong to the same genus of the family Leguminosae, due to differences in the functions, these two CMM should be used accordingly.

Note:

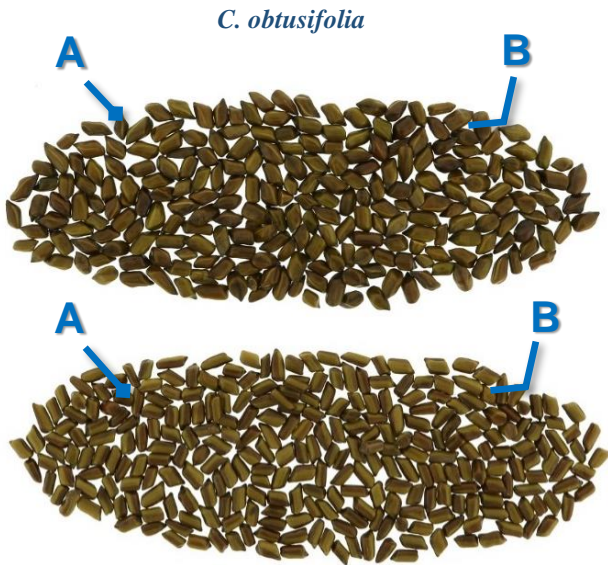
*Its name in the Chinese Pharmacopoeia (2020) is “Cassiae Semen”.

Key identification features

Macroscopic features of Semen Cassiae

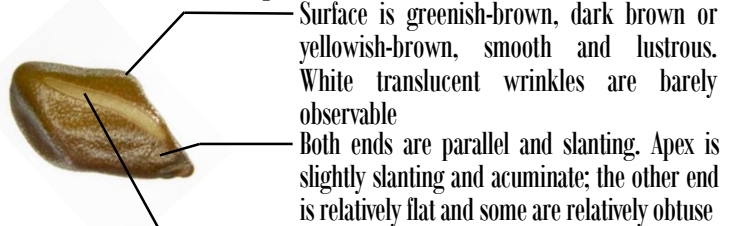


- ◆ Slightly rhomboid-cuboidal, cylindrical, tapered-rhomboid or tapered-rounded



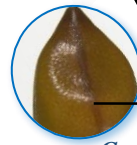
C. tora

1 cm



Surface is greenish-brown, dark brown or yellowish-brown, smooth and lustrous. White translucent wrinkles are barely observable

Both ends are parallel and slanting. Apex is slightly slanting and acuminate; the other end is relatively flat and some are relatively obtuse



With 1 light yellowish-brown, slanting, symmetrical and linear dent on both sides

With 1 protruding ridge each at the dorsal and ventral

C. obtusifolia

2 mm



Surface is brown, smooth and lustrous. White translucent wrinkles are occasionally observable at the dorsal

Both ends are parallel and slanting; one end is relatively flat and some are relatively obtuse, the other end is slightly slanting and acuminate

With 1 light brown or light greenish-brown broad band on both sides

With 1 protruding ridge each at the dorsal and ventral

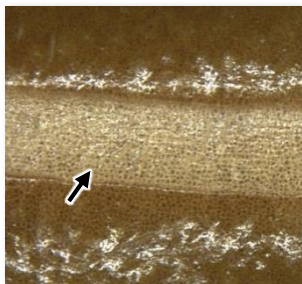
C. tora

2 mm

Micro-morphological features

C. obtusifolia

A: Light yellowish-brown linear dent with orderly arranged brown dot striations(→) observable
 B: 2 yellow cotyledons are bent to sub-“S” shape and overlapped



(Surface of the seed) 200 μm



(Transverse section of the seed) 500 μm

C. tora

A: Light yellowish-brown broad band with orderly arranged brown dots and light yellowish-white linear striations(→) observable

B: 2 cotyledons are bent to sub-“S” shape and overlapped



(Surface of the seed) 500 μm

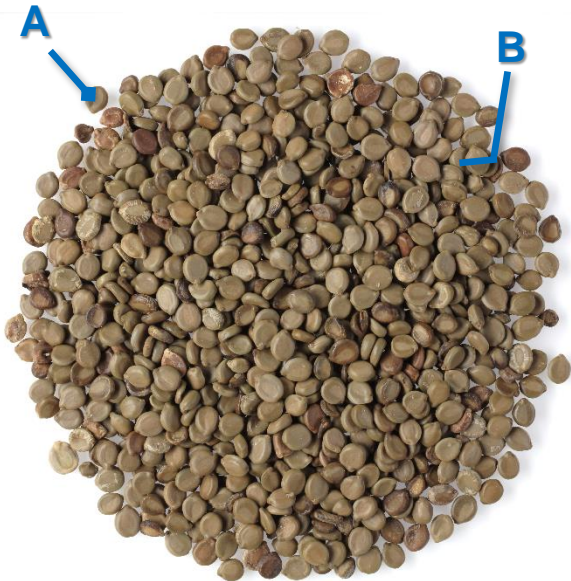


(Transverse section of the seed) 500 μm

Macroscopic features of Semen Cassiae Occidentalis



◆ Flattened ovate



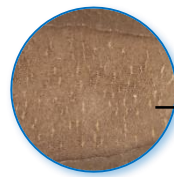
1 cm



2 mm

Surface is greyish-brown, dark greyish-green, dark brownish-green or brown, slightly smooth and slightly lustrous. White or translucent membrane is observable or barely observable at the surrounding

One end is oblique and slightly pointed with a slanting hilum beside the apex, the other end is obtuse



With 1 light brown, sub-elliptical and slightly sunken pleurogram located slightly towards the centre on both sides

Micro-morphological features

A: Pleurogram has irregular light yellowish-white striations(→) and brownish-black dots



(Surface of the seed)

500 μm

B: Cotyledons are linear and overlapped

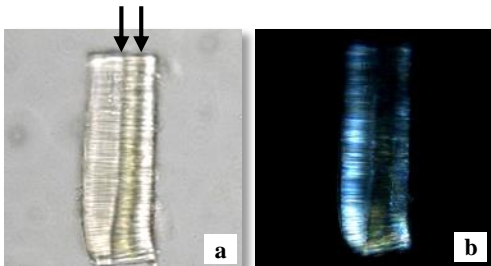
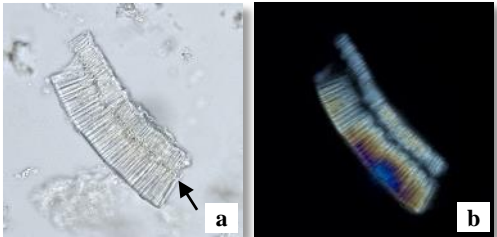
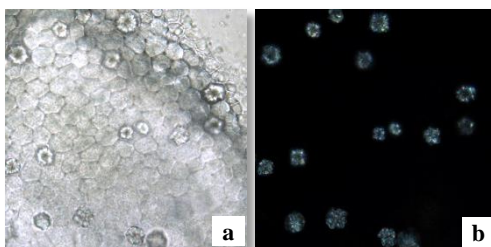



(Transverse section of the seed)

1 mm

Microscopic feature comparison of Semen Cassiae and Semen Cassiae Occidentalis powder



	Semen Cassiae	Semen Cassiae Occidentalis
Palisade cell of testa (Lateral view)	 <p>Frequently found, palisade cell in groups, colourless or light yellow, cells occur in 1 column in lateral view, appears rectangular, arranged slightly uneven, lumen small and narrow, with 1 luciferous band (→) each at the middle and area 1/3 from the lower part of the cell; polychromatic under the polarized light microscope</p>	 <p>Frequently found, palisade cell in groups, colourless or light yellow, cells occur in 1 column in lateral view, appears rectangular, arranged slightly even, lumen narrow, with 1 luciferous band (→) at the area 1/3 from the lower part of the cell; polychromatic under the polarized light microscope</p>
Cluster of calcium oxalate	 <p>Frequently found or numerous, present in the parenchymatous cell or scattered; polychromatic or golden yellow under the polarized light microscope</p>	 Absent

a. features under bright field; b. features under polarized light

50 μm

Summary

Major differences in the features between Semen Cassiae and Semen Cassiae Occidentalis:

		Semen Cassiae		Semen Cassiae Occidentalis
		<i>C. obtusifolia</i>	<i>C. tora</i>	
Macroscopic and micro-morphological features	Shape	Slightly rhomboid-cuboidal, cylindrical, tapered-rhomboid or tapered-rounded		Flattened ovate
	Surface of the seed	Linear dent with brown dot striations observable	Broad band with brown dots and light yellowish-white linear striations observable	Pleurogram has irregular light yellowish-white striations and brownish-black dots
	Transverse section	2 cotyledons are bent to sub-“S” shape and overlapped		Cotyledons are linear and overlapped
Microscopic features	Palisade cell of testa (Lateral view)	With 2 luciferous bands		With 1 luciferous band
	Cluster of calcium oxalate	Frequently found or numerous		Absent

For more information, please refer to the [Hong Kong Chinese Materia Medica Standards website](#):



Semen Cassiae - Hong Kong Chinese Materia Medica Standards (Volume 3)

Semen Cassiae Occidentalis - Hong Kong Chinese Materia Medica Standards (Volume 8)



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